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EXAMINER	
THEODORE, MAGALI P	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/593,060	Applicant(s) STENZEL, HOLGER	
	Examiner Magali P. Théodore	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _01 February 2010_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-18_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-18_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment filed February 1, 2010 was received.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1-2, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Knaus** (US 5,190,706) in view of Esposito et al. (US 4,316,868), henceforth **Esposito**.

Regarding **claim 1**, Knaus teaches melting a polymer mass, dividing the melt into two streams (6:1-3), mixing additives into one stream (6:17-20), using coextrusion in one die to recombine the streams (6:49-50). The polymer mass (3:14) may starts with ethylene vinyl acetate (3:27).

Knaus teaches a main stream (figure 5:51) and a subsidiary stream (figure 5:52), into which the additives (figure 5:28) are added. Knaus teaches coextruding the two streams to form a film (sheet, 2:54, figure 4A:81) with a tinted strip (figure 4A:82).

Applicant has claimed that the film is "suitable for use as an intermediate layer in laminated glazing." This recitation does not carry patentable weight because it merely describes the intended use of the film without further defining the film itself or the method by which it is made. The new recitation does not include, for example, an active step or a structural feature.

Knaus does not teach using polyvinyl butyral (PVB). However, Esposito teaches successfully using PVB in a remarkably similar process of coextruding (2:52-53) a main stream and a subsidiary stream (2:44-47) to form a film with a tinted strip (1:14-15). Therefore it would have been obvious to one of ordinary skill in the art to substitute PVB for the starting materials taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach using a pigment. However, Knaus teaches making multicolored products (title). Therefore it would have been obvious to one of ordinary skill in the art to use a pigment as an additive in Knaus's method in order to provide color.

Regarding **claim 2**, Knaus teaches sending each melt stream through a static mixer (figure 5:61b, 61a) after mixing the additives in (figure 5:58, 64).

Regarding **claim 6**, Knaus does not teach wedge or torpedo shapes. However, Esposito teaches using a torpedo-shaped probe (2:31) and a wedge-shaped extrusion orifice (2:35-36) in order to extrude a sheet with a smooth color gradient (1:53-64). Therefore, it would have been obvious to one of ordinary skill in the art to extrude at least one of Knaus's streams through an die with a wedge-shaped or torpedo-shaped partial area because Esposito teaches doing so to achieve a smooth transition between the colored and colorless parts of the product. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine the use of wedge- and torpedo-shaped partial areas in the extruder in order to achieve predictable results with a reasonable expectation of success.

Regarding **claim 9**, Knaus teaches extruding two melt streams of different colors to form a film or sheet (2:54) with at least two areas of different color intensity (title).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Knaus** in view of **Esposito** as applied to claim 1 above, and further in view of **Schuchardt** (US 2002/0067656 A1).

Regarding **claim 3**, Knaus does not teach using a dynamic mixer. However, Schuchardt teaches that dynamic mixers mix faster than static mixers (0006). Therefore, it would have been obvious to one of ordinary skill in the art to use a dynamic mixer in the method taught by Knaus because Schuchardt teaches doing so to save time. *Alternatively*, it would have been obvious to one of ordinary skill in the art to substitute dynamic mixers for the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Claims 4-5, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Knaus** in view of **Esposito** as applied to claim 1 above, and further in view of Postavnichev et al. (US 4,096,069), henceforth **Postavnichev**.

Regarding **claims 4-5**, Knaus does not teach filtering. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter the melt taught by Knaus because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to

combine a filtration step with the steps taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 14**, Knaus teaches that after the two streams are separated but before they are recombined for extrusion, the secondary flow (figure 5:52) to which the additives (figure 5:58) are added passes through a static mixer (figure 5:61b) after the additives are added.

Knaus does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Knaus because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 16**, Knaus does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill

in the art to filter either stream taught by Knaus because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Knaus** in view of **Esposito** as applied to claim 1 above.

Regarding **claim 7**, Knaus does not teach adding any of the claimed additives. However, Knaus teaches making multicolored products (title). Therefore it would have been obvious to one of ordinary skill in the art to use a pigment as an additive in Knaus's method in order to provide color.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

in view of **Esposito** as applied to claim 1 above, and further in view of **Striegel** (2002).

Regarding **claims 12** and **13**, Esposito does not disclose the degree of acetylation of the PVB. However, acetylation is a result effective parameter because the presence of acetyl groups affects both crosslinking and hydrophobicity. Therefore it

would have been obvious to one of ordinary skill in the art to optimize the PVB's degree of acetylation in order to control its crosslinking and hydrophobicity. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention (MPEP 2144.05 [R-5] II).

Esposito does not disclose the residual PVOH in the PVB. However, Striegel establishes the PVOH content as a result effective parameter by teaching that it affects such properties as how well the PVB sticks to surface such as glass, how it crosslinks and how it mixes with other materials (page 152 paragraph 1). Therefore it would have been obvious to one of ordinary skill in the art to optimize the PVOH content of the PVB in order to control these properties. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention (MPEP 2144.05 [R-5] II).

Claim 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Knaus** in view of **Esposito** as applied to claim 1 above, and further in view of **Chung** (2000) and **Postavnichev**.

Regarding **claim 15**, Knaus teaches that after the two streams are separated but before they are recombined for extrusion, the secondary flow (figure 5:52) to which the additives (figure 5:58) are added passes through a static mixer (figure 5:61b) after the additives are added.

Knaus does not teach passing the secondary flow through a pump before adding the additives. However, once the additives are added, the secondary flow immediately enters a static mixer. Chung teaches that the static mixer itself cannot pump the melt to

push the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). Therefore, it would have been obvious to employ a pump because Chung teaches doing so to force the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of a pump with the use of the static mixer taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the relative timing of the pumping step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Knaus does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Knaus because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 17**, Knaus teaches that after the additives (figure 5:58) are added to the secondary flow (figure 5:52), it passes through a static mixer (figure 5:61b) before the flows are recombined for extrusion.

Knaus does not teach passing either flow through a pump after mixing. However, the each flow is mixed in a static mixer (figure 5:61b and 61a). Chung teaches that the static mixer itself cannot pump the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). A pump placed upstream of the mixer pushes the melt through; a pump placed downstream of the mixer draws the melt through; these are functionally equivalent. Therefore, it would have been obvious to employ pumps after each mixer because Chung teaches doing so to propel the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of pumps with the use of the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the relative timing of the pumping step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Knaus does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either

stream taught by Knaus because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Knaus** in view of **Esposito** as applied to claim 1 above, and further in view of **Schuchardt**, **Chung** and **Postavnichev**.

Regarding **claim 18**, Knaus teaches that after the additives (figure 5:58) are added to the secondary flow (figure 5:52), it passes through a static mixer (figure 5:61b) before the flows are recombined for extrusion.

Knaus does not teach a dynamic mixer. However, Schuchardt teaches that dynamic mixers mix faster than static mixers (0006). Therefore, it would have been obvious to one of ordinary skill in the art to use a dynamic mixer in the method taught by Knaus because Schuchardt teaches doing so to save time. *Alternatively*, it would have been obvious to one of ordinary skill in the art to substitute dynamic mixers for the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach passing either flow through a pump either before or after mixing. However, the each flow is mixed in either a static mixer (figure 5:61b and 61a) or a dynamic mixer, if one modifies Knaus in view of Schuchardt. Chung teaches that a static mixer itself cannot pump the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). Chung also teaches that commercially available dynamic mixers available in 2000 could not pump either and had an even higher pressure drop than static mixers (page 234). At the time of the invention, 2005, it would have been the case that many if not most dynamic mixers would have had limited pumping ability and that the pressure drop would still have been an issue. Therefore, it would have been obvious to employ pumps after each mixer because Chung teaches doing so to propel the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of pumps with the use of the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding claim the placement of the pumps, a pump placed upstream of the mixer pushes the melt through; a pump placed downstream of the mixer draws the melt through; these are functionally equivalent. Regarding the number of the pumps, it would have been obvious to one of ordinary skill in the art that two pumps can work together to amplify the effect of a single pump. Mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See MPEP 2144.04 VI B.

Knaus does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Knaus because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claims 1 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus**.

Regarding **claim 1**, Esposito teaches providing two melt streams (2:44-47), mixing additives into one stream (dye or pigment, 5:10-11) and using coextrusion in a single die to combine the streams (2:52-53). The polymer mass starts with PVB (5:66). Esposito teaches a main stream and a subsidiary stream (2:43-47), the latter of which has a pigment as the additive (5:10-11). Esposito teaches coextruding two melt streams of different colors to form film or sheet with at least two areas of different color intensity (windshield, 1:21-26).

Applicant has claimed that the film is "suitable for use as an intermediate layer in laminated glazing." This recitation does not carry patentable weight because it merely describes the intended use of the film without further defining the film itself or the method by which it is made. The new recitation does not include, for example, an active step, a structural feature or a material.

Esposito does not teach forming the two streams by dividing a single polymer melt. However, Knaus teaches that beginning with a single polymer melt and dividing it is an equally effective alternative (5:67-6:3, figure 5) to beginning with two separate polymer melts (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art to substitute the use of single polymer melt for the use of two in order to achieve predictable results with a reasonable expectation of success.

Regarding **claim 6**, Esposito teaches extruding one stream through a die piece with a wedge-shaped partial area (2:35-36) and one stream through a die piece with a torpedo-shaped partial area (2:31).

Regarding **claim 7**, Esposito teaches adding a pigment (5:11).

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Schuchardt**.

Regarding **claims 2** and **3**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer.

Esposito does not teach using a static or dynamic mixer. However, Schuchardt teaches that dynamic mixers mix faster than static mixers (0006). Therefore, it would have been obvious to one of ordinary skill in the art to use a dynamic mixer in the method taught by Esposito because Schuchardt teaches doing so to save time. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine the use of a dynamic mixer with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Claims 4-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Postavnichev**.

Regarding **claims 4-5**, Esposito does not teach filtering. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter the melt taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 14**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the two streams are separated but before they are recombined for extrusion, the secondary flow (figure 5:52) to which the additives (figure 5:58) are added passes through a static mixer (figure 5:61b) after the additives are added. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 16**, Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing

so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Striegel**.

Regarding **claims 12** and **13**, Esposito does not disclose the degree of acetylation of the PVB. However, acetylation is a result effective parameter because the presence of acetyl groups affects both crosslinking and hydrophobicity. Therefore it would have been obvious to one of ordinary skill in the art to optimize the PVB's degree of acetylation in order to control its crosslinking and hydrophobicity. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention (MPEP 2144.05 [R-5] II).

Esposito does not disclose the residual PVOH in the PVB. However, Striegel establishes the PVOH content as a result effective parameter by teaching that it affects such properties as how well the PVB sticks to surface such as glass, how it crosslinks and how it mixes with other materials (page 152 paragraph 1). Therefore it would have been obvious to one of ordinary skill in the art to optimize the PVOH content of the PVB

in order to control these properties. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention (MPEP 2144.05 [R-5] II).

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Chung** (2000) and **Postavnichev**.

Regarding **claim 15**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the two streams are separated but before they are recombined for extrusion, the secondary flow (figure 5:52) to which the additives (figure 5:58) are added passes through a static mixer (figure 5:61b) after the additives are added. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach passing the secondary flow through a pump before adding the additives. However, once the additives are added, the secondary flow immediately enters a static mixer. Chung teaches that the static mixer itself cannot pump the melt to push the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). Therefore, it would have been obvious to employ a pump because Chung teaches doing so to force the melt through the static

mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of a pump with the use of the static mixer taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the relative timing of the pumping step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Regarding **claim 17**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the additives (figure 5:58) are added to the secondary flow (figure 5:52), it passes through a static mixer (figure 5:61b) before the

flows are recombined for extrusion. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Neither Knaus nor Esposito teaches passing either flow through a pump after mixing. However, the each flow is mixed in a static mixer (figure 5:61b and 61a). Chung teaches that the static mixer itself cannot pump the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). A pump placed upstream of the mixer pushes the melt through; a pump placed downstream of the mixer draws the melt through; these are functionally equivalent. Therefore, it would have been obvious to employ pumps after each mixer because Chung teaches doing so to propel the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of pumps with the use of the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding the relative timing of the pumping step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18).

Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over **Esposito** in view of **Knaus** as applied to claim 1 above, and further in view of **Schuchardt**, **Chung** and **Postavnichev**.

Regarding **claim 18**, Esposito does not teach mixing. However, Esposito teaches pigmenting one stream (5:10-11), which inherently requires mixing pigment with the polymer. Knaus teaches that after the additives (figure 5:58) are added to the secondary flow (figure 5:52), it passes through a static mixer (figure 5:61b) before the flows are recombined for extrusion. Therefore, it would have been obvious to one of ordinary skill in the art to combine the steps taught by Knaus with those taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach a dynamic mixer. However, Schuchardt teaches that dynamic mixers mix faster than static mixers (0006). Therefore, it would have been

obvious to one of ordinary skill in the art to use a dynamic mixer in the method taught by Knaus because Schuchardt teaches doing so to save time. *Alternatively*, it would have been obvious to one of ordinary skill in the art to substitute dynamic mixers for the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Knaus does not teach passing either flow through a pump either before or after mixing. However, the each flow is mixed in either a static mixer (figure 5:61b and 61a) or a dynamic mixer, if one modifies Knaus in view of Schuchardt. Chung teaches that a static mixer itself cannot pump the melt through; a pump is required to compensate for the pressure drop across the static mixer (page 323 paragraph 2). Chung also teaches that commercially available dynamic mixers available in 2000 could not pump either and had an even higher pressure drop than static mixers (page 234). At the time of the invention, 2005, it would have been the case that many if not most dynamic mixers would have had limited pumping ability and that the pressure drop would still have been an issue. Therefore, it would have been obvious to employ pumps after each mixer because Chung teaches doing so to propel the melt through the static mixer and to compensate for the pressure drop therein. Alternatively, it would have been obvious to one of ordinary skill in the art to combine the use of pumps with the use of the static mixers taught by Knaus in order to achieve predictable results with a reasonable expectation of success.

Regarding claim the placement of the pumps, a pump placed upstream of the mixer pushes the melt through; a pump placed downstream of the mixer draws the melt

through; these are functionally equivalent. Regarding the number of the pumps, it would have been obvious to one of ordinary skill in the art that two pumps can work together to amplify the effect of a single pump. Mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See MPEP 2144.04 VI B.

Esposito does not teach filtering either stream. However, Postavnichev teaches filtering extrusion melts (title, 1:11-12) in order to rid them of contaminants (1:15, 1:18). Therefore it would have been obvious to one of ordinary skill in the art to filter either stream taught by Esposito because Postavnichev teaches doing so to purify the melt. *Alternatively*, it would have been obvious to one of ordinary skill in the art to combine a filtration step with the steps taught by Esposito in order to achieve predictable results with a reasonable expectation of success.

Regarding the timing of the filtration step, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04 IIC, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Response to Arguments

Applicant's arguments filed February 1, 2010 have been fully considered but they are not persuasive.

Applicant argues that Knaus does not teach a process involving PVB. In response to Applicant's argument, Esposito and not Knaus is relied upon to teach PVB.

Applicant argues that Knaus's foam is not suitable for use as an intermediate layer in laminated glazing. In response to Applicant's argument, this recitation of the product's intended use does not modify the claimed method because it does not define any properties, structures or composition in the product, nor does it define any structures, materials or active steps in the method.

Applicant argues that, as references, Knaus and Esposito are too different to combine because of Esposito uses a slit die to form a transparent sheet while Knaus forms uses an annular die to form a foam tube. In response to Applicant's argument, Knaus and Esposito have important features in common that make them combinable. First, both are examples of coextrusion that combine two melts to produce an article with a color band. Second, regarding the shape of the product, Knaus teaches that the foamed product may be a sheet (2:53). Third, regarding the materials, while Knaus teaches using vinyl halides like polyvinyl chloride (3:16-17), Esposito teaches the functional equivalence in this context of polyvinyl acetals like PVB to polyvinyl halides (5:24-26), so it would have been obvious to one of ordinary skill in the art to substitute one for the other. A person of ordinary skill in extrusion molding would not have been held back in her learning by the shape of die. She would have seen that the basic concept in these two references is the same: coextruding two melt streams, one with color and one without, to produce a striped article.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon

hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magali P. Théodore whose telephone number is (571)

270-3960. The examiner can normally be reached on Monday through Friday 9:00 a.m. to 6:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer K. Michener can be reached on (571) 272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer K. Michener/
Supervisory Patent Examiner, Art Unit 1795

/Magali P. Théodore/
Examiner, Art Unit 1795